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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,105	10/17/2001	Roger L. Schultz	SC-01-05	4527

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EXAMINER

COLLINS, GIOVANNA M

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,105

Applicant(s)

SCHULTZ ET AL.

Examiner

Giovanna M. Collins

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 and 10-13 is/are allowed.
- 6) ☒ Claim(s) 6-9 and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Daly et al. ('647).

Daly et al. discloses (see Fig. 5) a down hole assembly which indicates a failure condition by irreversibly movement of a valve (99a) which affects mud flow impedance from a first state which is initially present during normal drilling irreversibly into at least one intermediate state having reduced mud flow impedance which indicates a failure condition (see col. 8, lines 20-31), and thereafter irreversibly into a final state, which returns mud flow impedance to substantially that seen during normal drilling (col. 8, lines 32-47).

Referring to claim 7, Daly et al. disclose sensors (39) located on the down hole assembly which monitors parameters indicative of drill bit condition.

Referring to claim 8, Daly et al. discloses valve (99) movement is capable of occurring at a time constant of at least about one second.

Referring to claim 9, Daly et al. discloses wherein the mud flow impedance is varied by opening an aperture (at 101) which allows mud to flow from the interior of the drill string to a bore hole.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charmody et al. ('857).

Charmody et al. discloses a method of operating a drill rig comprising using down hole circuitry to signal a change in down hole sensors by causing a reduction in drilling fluid static pressure (see col. 10, lines 42-52). Charmody et al. is silent as to what the down hole sensors are detecting. However, the use of sensors to detect a change in the condition of down hole equipment is well known in the art. As one of ordinary skill in the art would be familiar with the use of sensors to sense a change in down hole equipment conditions, it would be obvious to one of ordinary skill in the art modify Charmody to use down hole circuitry to signal a change in down hole equipment conditions.

Referring to claim 15, Charmody et al. discloses the pressure reduction is caused by irreversible movement of a valve (see Fig 24, at 240).

Referring to claim 16, Charmody et al. discloses pressure variation is caused by cycling a valve (at 240) through a position which reduces fluid pressure and through a position with restores fluid flow to its normal state (as the sleeve goes from the open to close position).

Referring to claim 17, Charmody discloses sensors (see col. 10, lines 42-52) but silent as to what the down hole sensors are detecting. However, the use of sensors to detect the condition

of down hole equipment is well known in the art. As one of ordinary skill in the art would be familiar with the use of sensors to detect a change in down hole equipment conditions, it would be obvious to one of ordinary skill in the art modify Charmody to use sensors to detect a change in down hole equipment conditions.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Charmody et al. ('857) in view of Esfahani et al. ('004).

Charmody, as modified, discloses the method of claim 14 but does not disclose adaptive filter. Esfahani et al. teaches that adaptive filters remove noise and DC bias from a signal. As it would be advantageous to remove any noise in a signal from a sensor, it would be obvious to one of ordinary skill in the art to further modify Charmody to have an adaptive filter as taught by Esfahani et al.

Allowable Subject Matter

4. Claims 1-5 and 10-13 are allowed.

Response to Arguments

5. Applicant's arguments filed August 15, 2003 have been fully considered but they are not persuasive. Concerning the argument against Daly('647), Daly does disclose a final state where the mud flow impedance returns to substantially that seen during normal drilling (see col. 8, lines 42-46 and Fig. 7).

Applicant's arguments with respect to claims 14-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 703-306-5707. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 703-308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Art Unit: 3672

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

gmc

October 31, 2003



David Bagnell
Supervisory Patent Examiner
Technology Center 3670